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VIRTUAL

iPSZÜRICH

A Lecture Series Focused on Induced Pluripotent Stem Cells
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RECAPITULATING COMPLEX HUMAN TISSUE USING ORGAN-ON-CHIP AND ORGANOID TECHNOLOGIES

Drug discovery and development to date has relied on animal models, which are useful, but fail to resemble human physiology. The discovery of human induced pluripotent stem cells (hiPSC) has led to the emergence of a new paradigm of drug screening using human patient- and disease-specific organ/tissue-models. One promising approach to generate these models is by combining the hiPSC technology with microfluidic devices tailored to create physiological environments and recapitulate 3D tissue structure and function. Such Organ-on-Chip (OoC) platforms or microphysiological systems (MPS) combine human genetic background, *in vivo*-like tissue structure, physiological functionality, and “vasculature-like” perfusion. These complex human-relevant models put the research community now in a position to provide answers to questions that animal models were not and to explore new paradigms in drug development, personalized medicine, toxicity screening, and mechanistic research.

